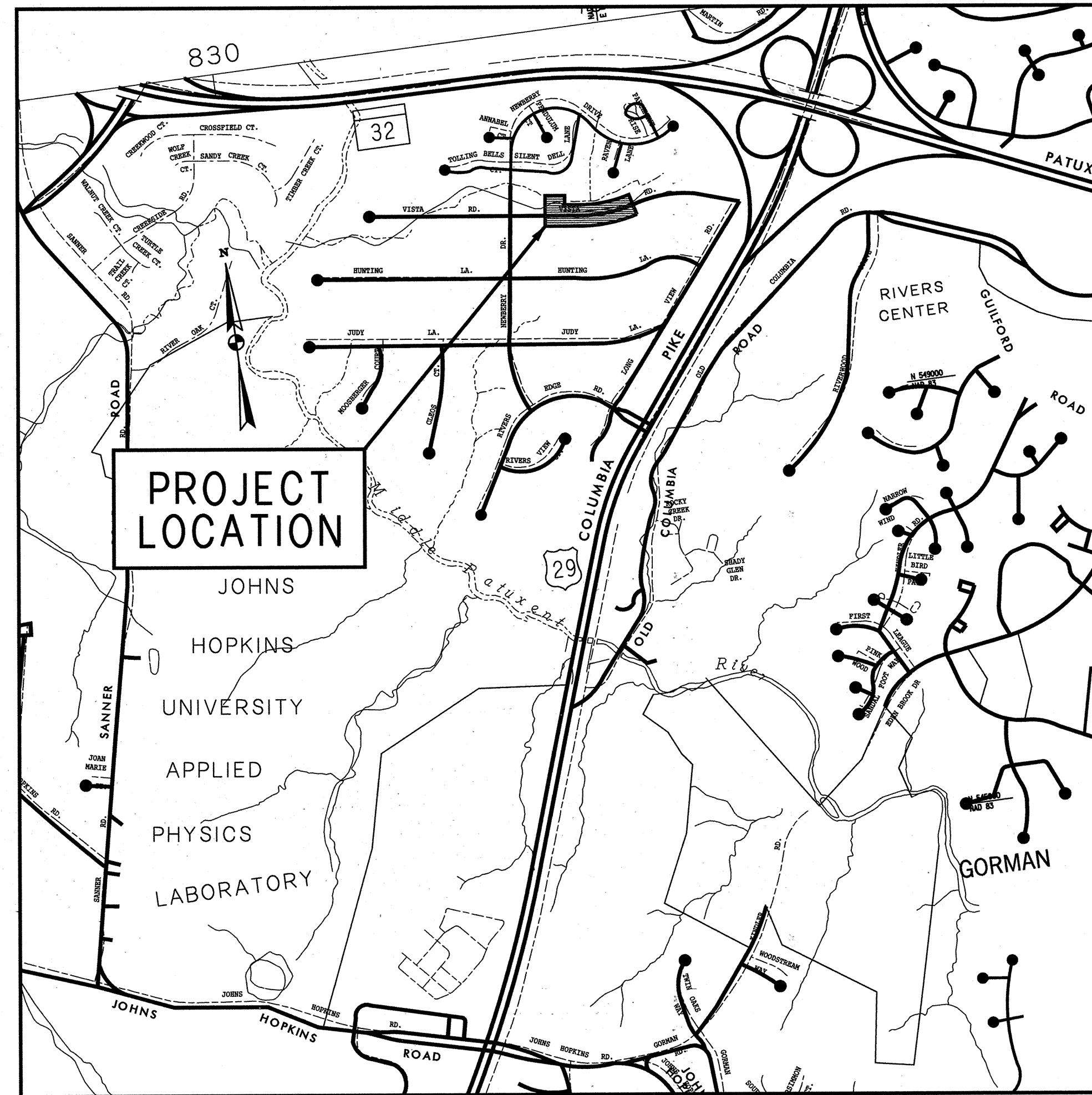


STORM DRAIN IMPROVEMENTS AT VISTA ROAD

INDEX OF DRAWINGS

1. TITLE SHEET
2. STORM DRAIN PLAN
3. STORM DRAIN PROFILE
4. STRUCTURE SCHEDULE AND MISCELLANEOUS DETAILS
5. EROSION AND SEDIMENT CONTROL PLAN
6. EROSION AND SEDIMENT CONTROL DETAILS

5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. D-1108

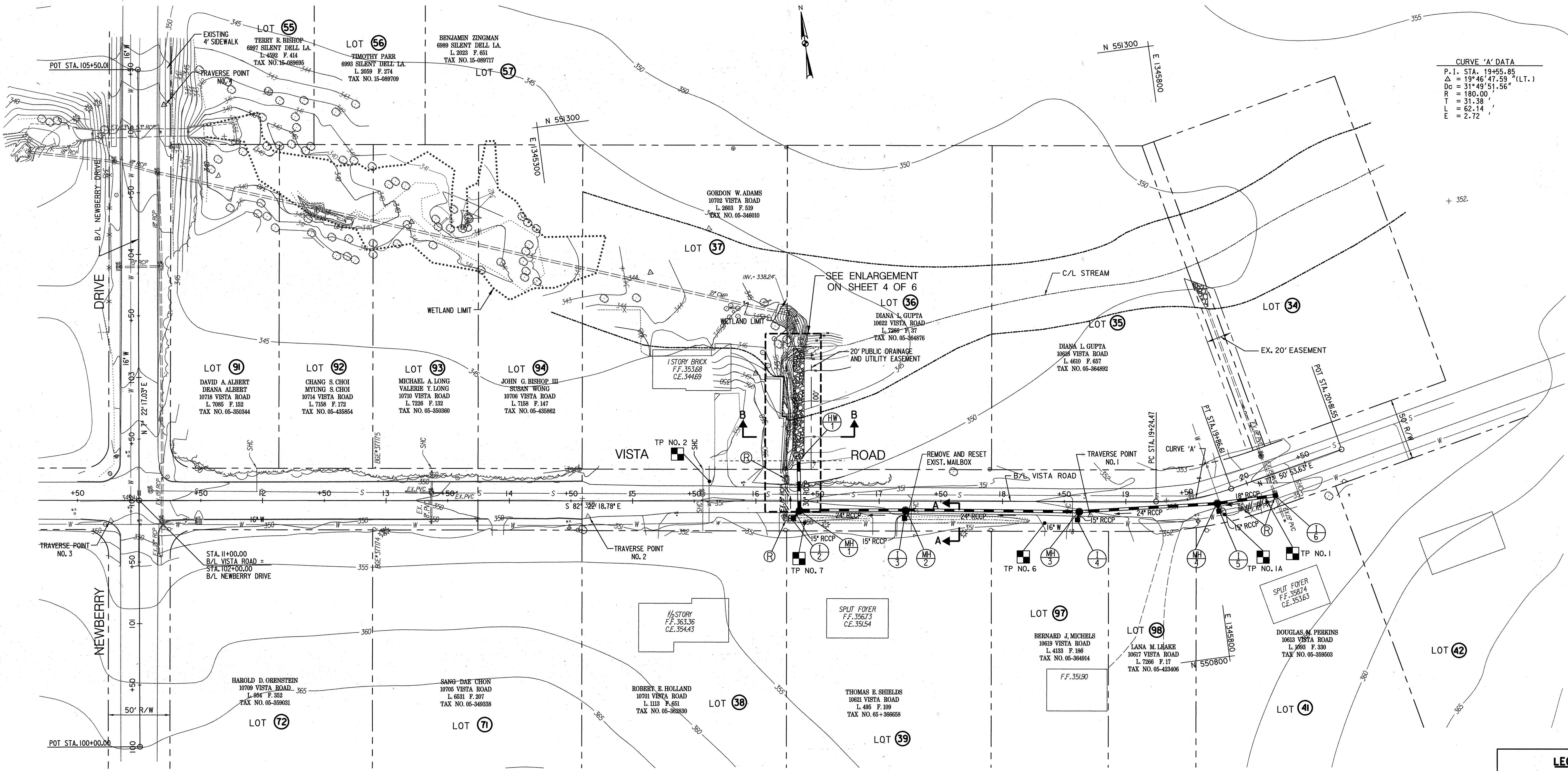


LOCATION MAP
HOWARD COUNTY
SCALE: 1" = 500'

GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AND MISS UTILITY AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK.
2. THE HORIZONTAL AND VERTICAL CONTROL FOR THESE PLANS ARE BASED ON THE MARYLAND STATE SYSTEM OF PLANE COORDINATES AS ESTABLISHED FROM HOWARD COUNTY CONTROL STATION NO. 0057 (ELEVATION 399.583), N 550,835.213, E 1,347,017.689 BEING A MONUMENT SET ON THE WEST SIDE OF RTE 29 AT VISTA AND LONGVIEW ROADS. CONTROL STATION NO. 41C2 (ELEVATION 395.851), N 551,616.404, E 1,348,104.227 BEING A MONUMENT SET IN THE MEDIAN OF RTE 32, 100± FEET EAST OF RTE 29.
3. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C AND G.S. MEAN SEA LEVEL DATUM, 1929.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
5. ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ISSUED BY THE WATER RESOURCES ADMINISTRATION AND THE NATURAL RESOURCES CONSERVATION SERVICE.
6. TOPOGRAPHIC SURVEYS WERE PERFORMED BY URS CORPORATION IN 1999.
7. THE PROPERTY LINES WERE TAKEN FROM UTILITY PLANS, PROPERTY PLATES AND TAX MAPS AND CAN NOT BE CONSIDERED ACCURATE.
8. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
9. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
10. APPROXIMATE UTILITIES ARE SHOWN FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
11. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
12. TWO WAY TRAFFIC SHALL BE MAINTAINED ALONG VISTA ROAD AT ALL TIMES. ACCESS TO PRIVATE DRIVEWAYS SHALL ALSO BE MAINTAINED AT ALL TIMES. REFER TO HOWARD COUNTY STANDARD TE-11 FOR TRAFFIC CONTROL PLAN.
13. ALL PIPE TRENCHES SHALL BE PROPERLY SUPPORTED TO PROTECT PRIVATE PROPERTY.
14. PAVEMENT AND CURBING REMOVED DURING THE INSTALLATION OF THE STORM DRAIN SHALL BE REPLACED IN KIND. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PIPE. REFER TO HOWARD COUNTY STANDARD G4.01.
15. MAILBOXES REMOVED TO ACCOMMODATE THE CONSTRUCTION SHALL BE RESET AT THEIR ORIGINAL LOCATION. THIS EFFORT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PIPE.

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>Jan J. [Signature]</i> 11/25/03 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Ernest E. [Signature]</i> 11/24/03 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE</p>	<p>PREPARED BY</p> <p>URS</p> <p>4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220</p>	<p>DES: DCD</p> <p>DRN: SYC</p> <p>CHK: DTM</p> <p>DATE: 10/03</p>	<p>BY NO. REVISION DATE</p>	<p>TITLE SHEET</p>	<p>STORM DRAIN IMPROVEMENTS AT VISTA ROAD</p> <p>5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 1 OF 6</p>
---	--	--	-----------------------------	---------------------------	---	---



CURVE 'A' DATA

P.I. STA.	19+55.85
Δ	= 19° 46' 47.59" (LT.)
Dc	= 31' 49" 51.56"
R	= 180.00'
T	= 31.38'
L	= 62.14'
E	= 2.72'

LEGEND

- EXISTING WETLANDS
- 350- EXISTING CONTOURS
- PROPOSED STORM DRAIN
- SHC EXISTING SANITARY HOUSE CONNECTION
- ⊙ PIN OR IRON PIPE
- △ TRAVERSE POINT
- == ABANDON PIPE
- === REMOVE PIPE
- Ⓜ REMOVE EXISTING STRUCTURE
- APPROX. 100-YR FLOODPLAIN

TEST PIT INFORMATION

TEST PIT NO.	UTILITY	TEST DATE	COVER	TOP ELEV.
1	1"	1-31-2001	4.64	347.80
1A	16"W/1"W	2-2-2001	4.00	348.04
2	3/4"W	1-30-2001	3.56	347.20
6	16"W	1-31-2001	4.92	346.04
7	16"W	1-30-2001	4.16	346.40

TEST PIT NOS. 3 & 4 WERE OUTSIDE THE LIMIT OF WORK.
TEST PIT NO. 5 WAS NOT PERFORMED.

COORDINATE TABLE

STATION	BASELINE	NORTH	EAST
POT 10+50.00	VISTA	551,055.2580	1,344,841.2230
PC 19+24.47	VISTA	550,932.5418	1,345,757.5077
PT 19+86.61	VISTA	550,934.9821	1,345,819.2917
POT 20+81.55	VISTA	550,954.9690	1,345,912.1130
POT 100+00.00	NEWBERRY	550,843.6340	1,344,914.6780
POT 102+00.00	NEWBERRY	551,041.9837	1,344,940.3384
POT 105+50.01	NEWBERRY	551,389.0940	1,344,985.2440

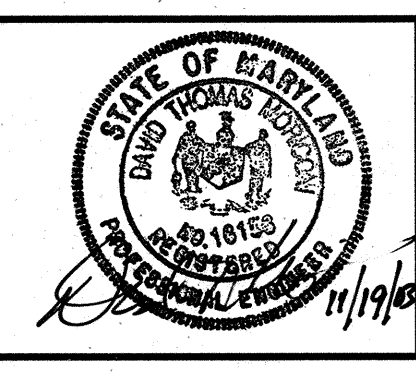
TRAVERSE DATA

POINT	NORTH	EAST	ELEVATION	REMARK
1	550,928.5463	1,345,703.4136	351.99	
2	550,981.0390	1,345,299.3020	350.56	
3	551,028.6230	1,344,915.5390	348.84	
4	551,357.9450	1,345,002.4715	347.90	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Laurel J. ...* 11/24/03
 Chief, Bureau of Engineering: *Robert ...* 11/24/03
 Chief, Division of Transportation and Special Projects: *Evelyn ...* 11/24/03
 Chief, Bureau of Highways: *W. ...* 11/24/03

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES:	DCD		
DRN:	SYC		
CHK:	DTM		
DATE:	10/03		
BY:	NO.		
REVISION:			
DATE:			

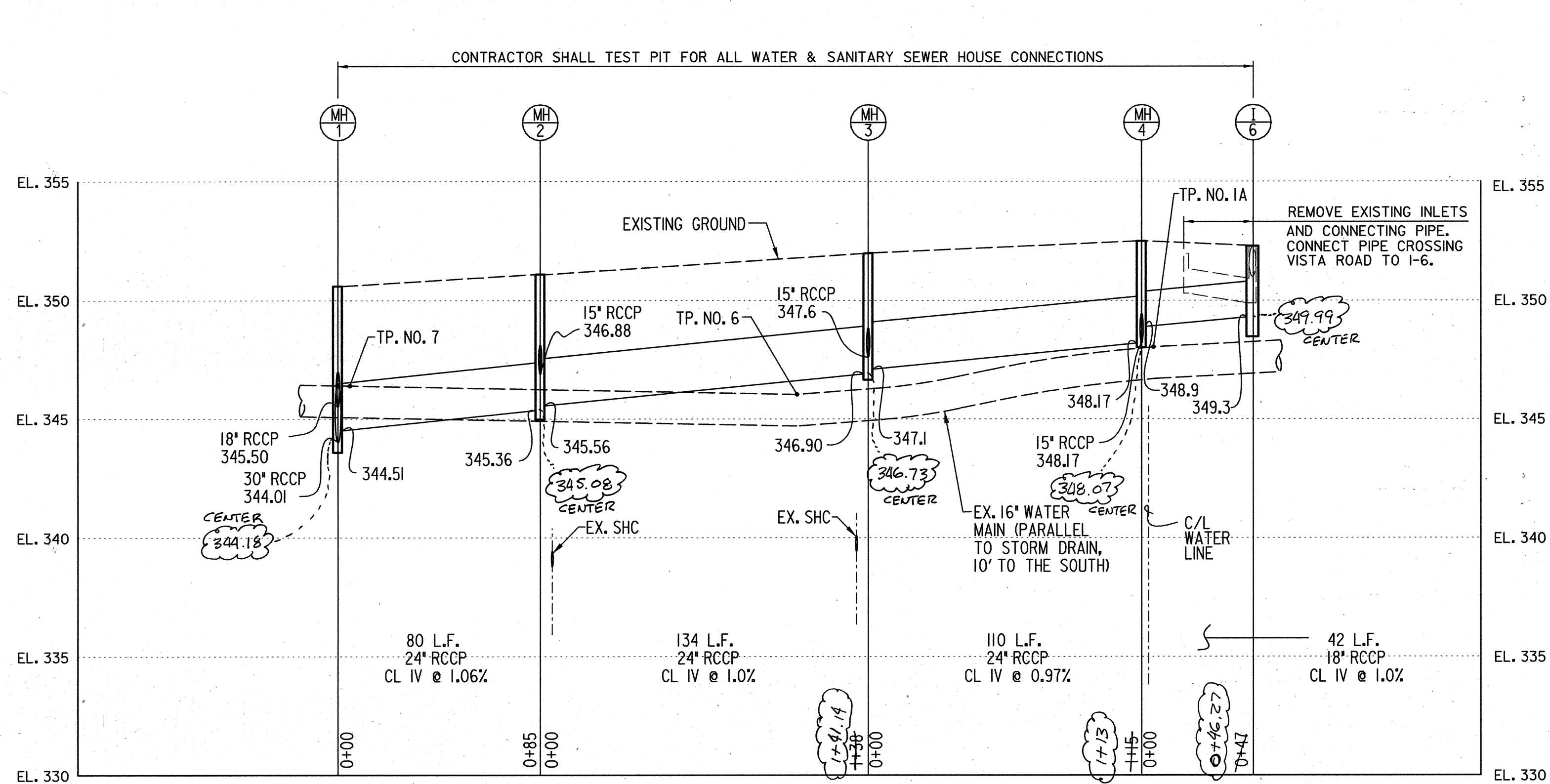
STORM DRAIN PLAN

SCALE MAP NO. _____ BLOCK NO. _____

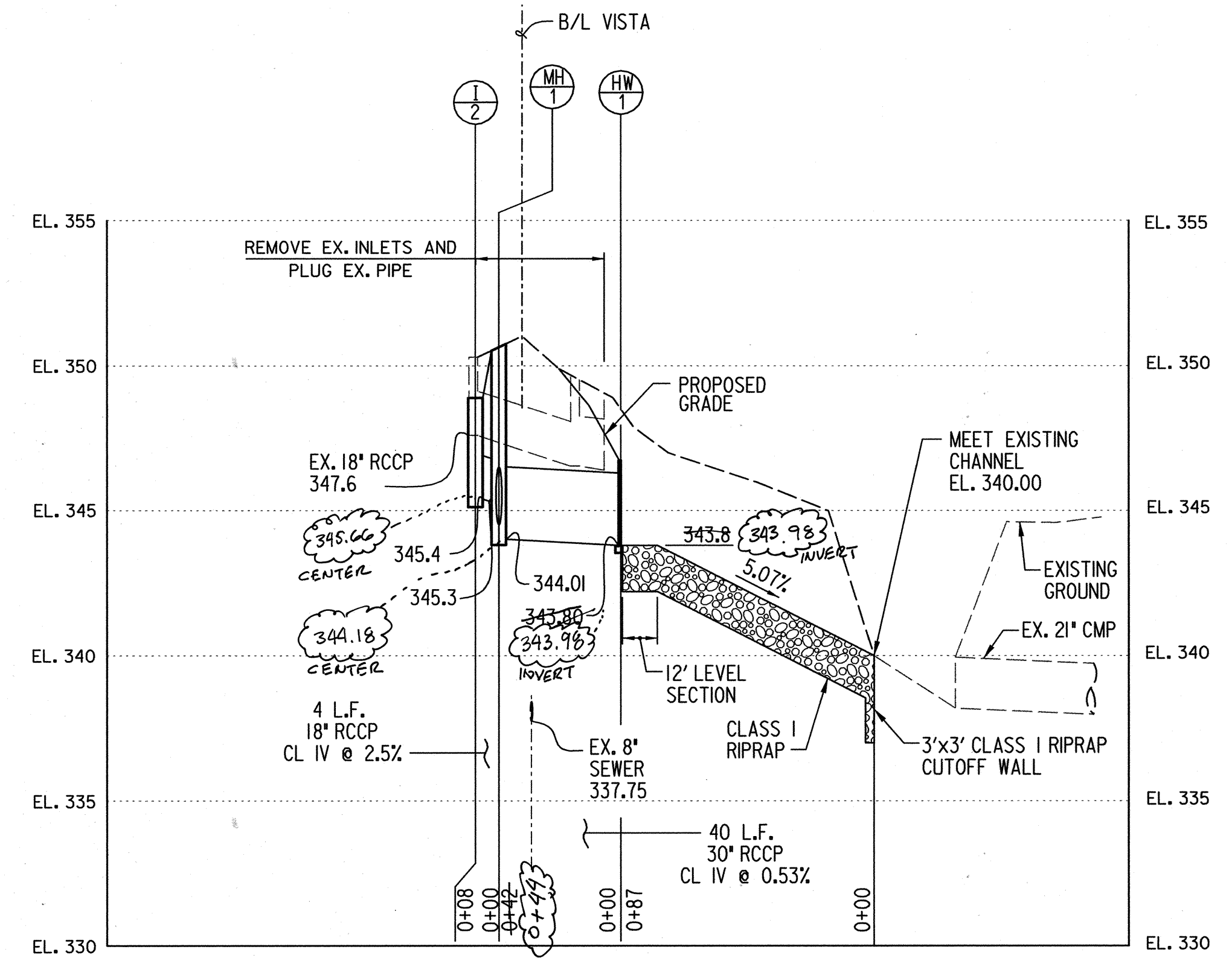
STORM DRAIN IMPROVEMENTS AT VISTA ROAD

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

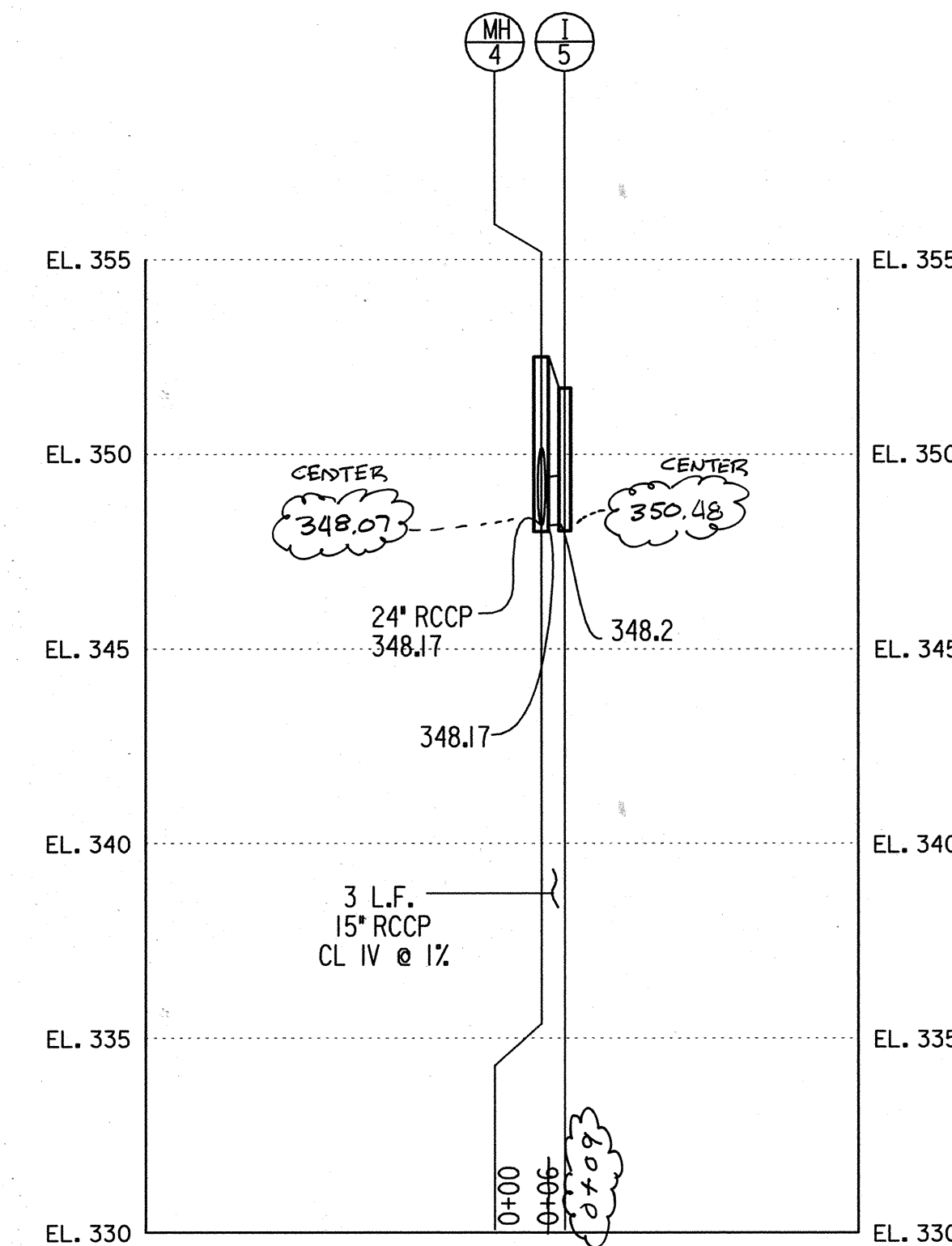
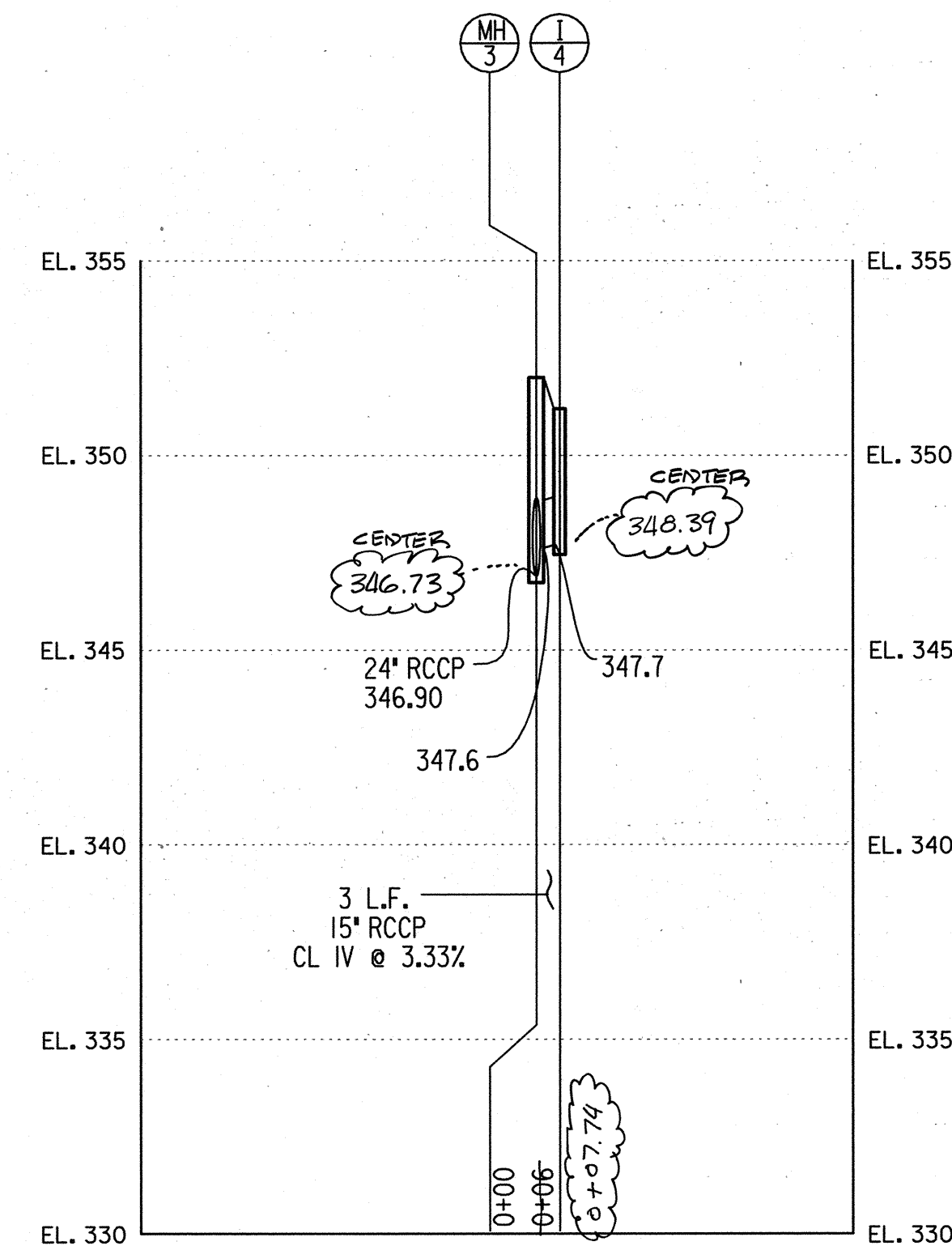
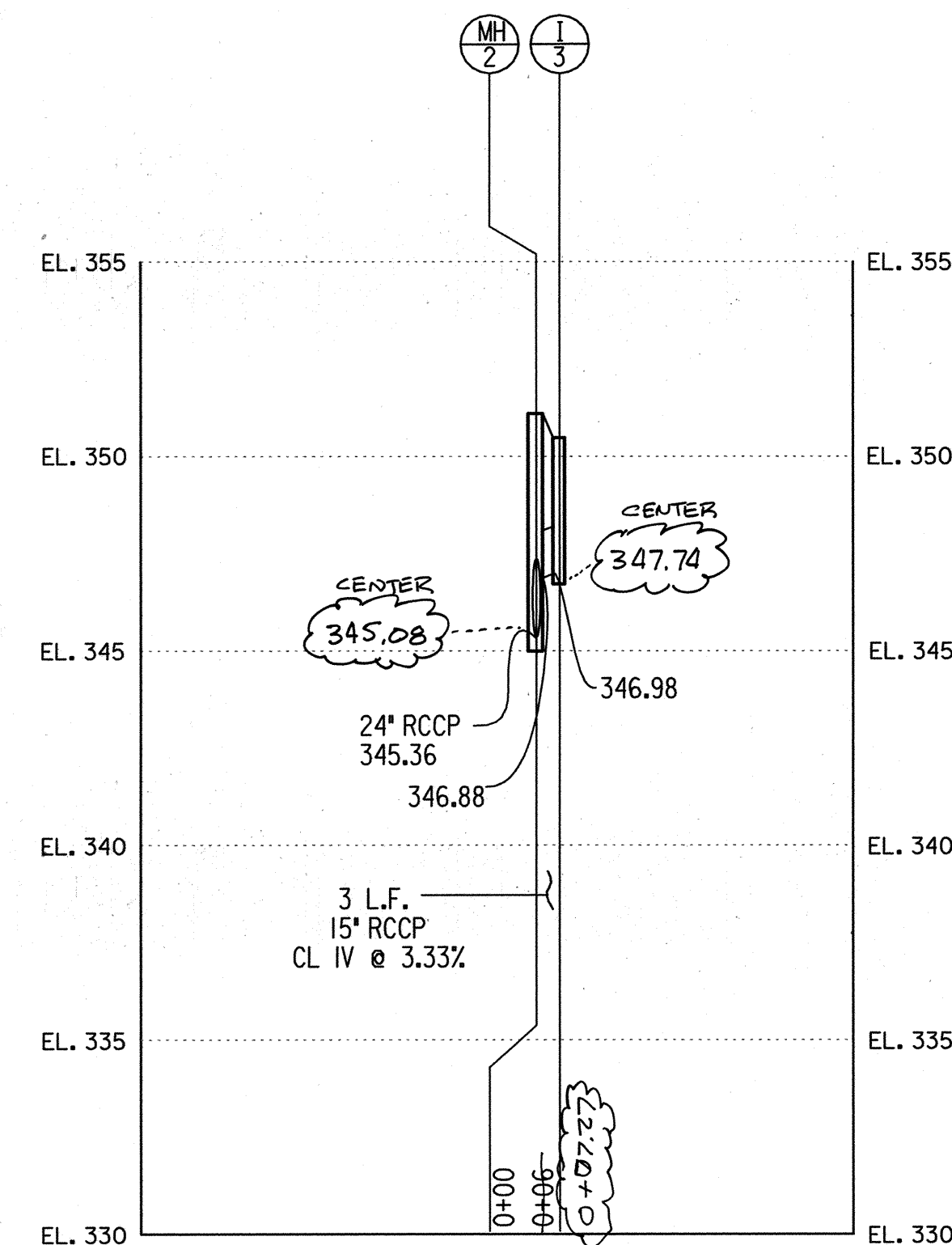
SCALE 1" = 40'
SHEET 2 OF 6



STORM DRAIN PROFILE
SCALE: HORIZ 1"=40'
VERT 1"=4'



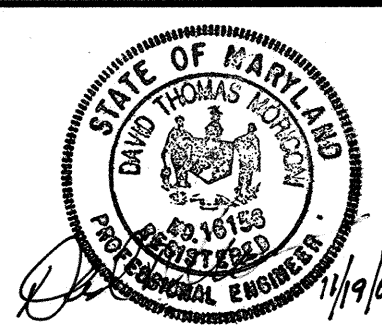
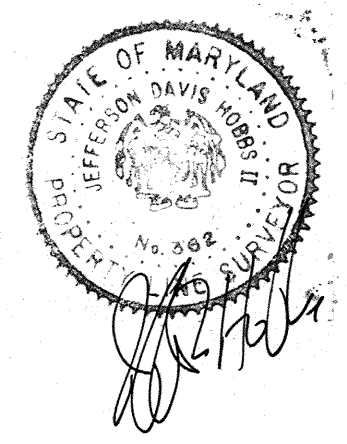
STORM DRAIN PROFILE
SCALE: HORIZ 1"=40'
VERT 1"=4'



NOTE: AS-BUILT ELEVATIONS ARE SHOWN INSIDE CLOUDS.

I CERTIFY THAT AN AS-BUILT SURVEY WAS PERFORMED ON 11-17-04

NOTICE TO CONTRACTOR
CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INITIATING ANY GRADING



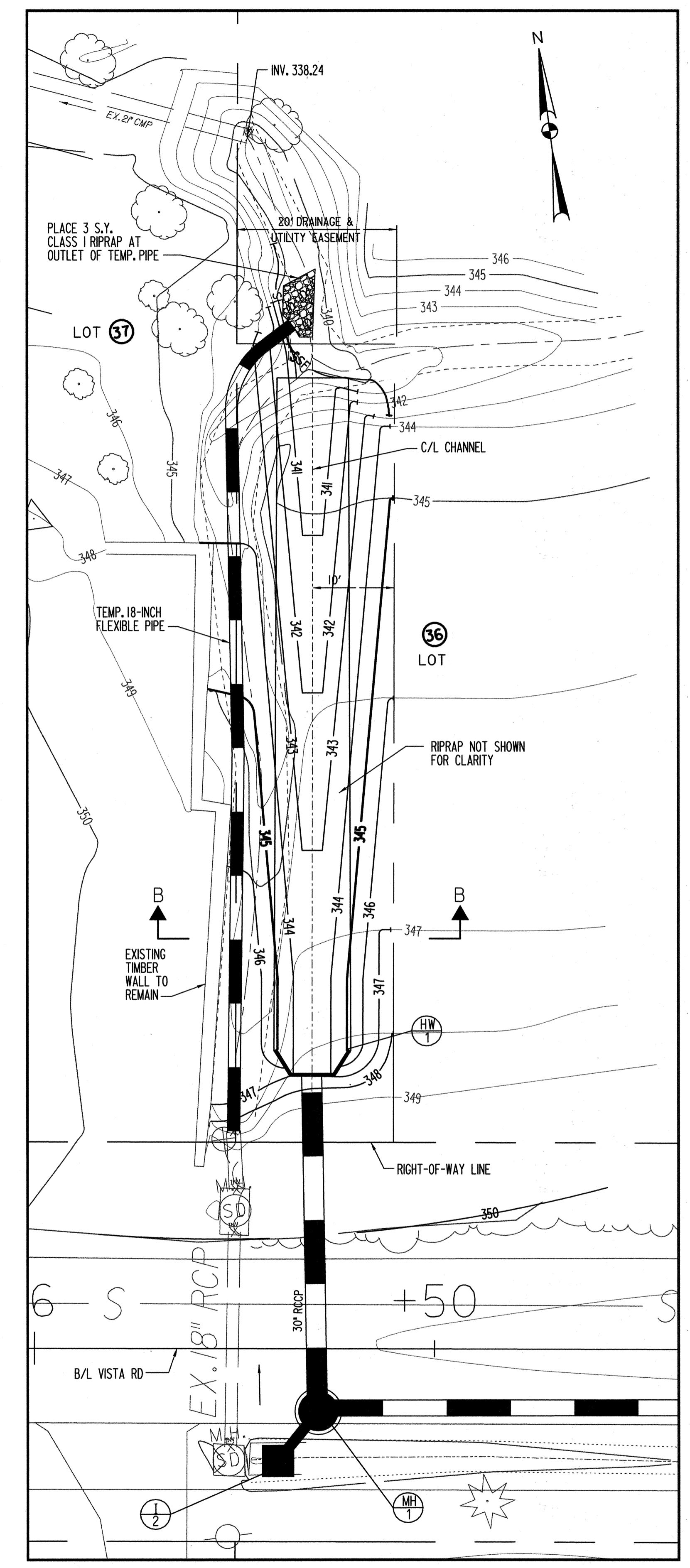
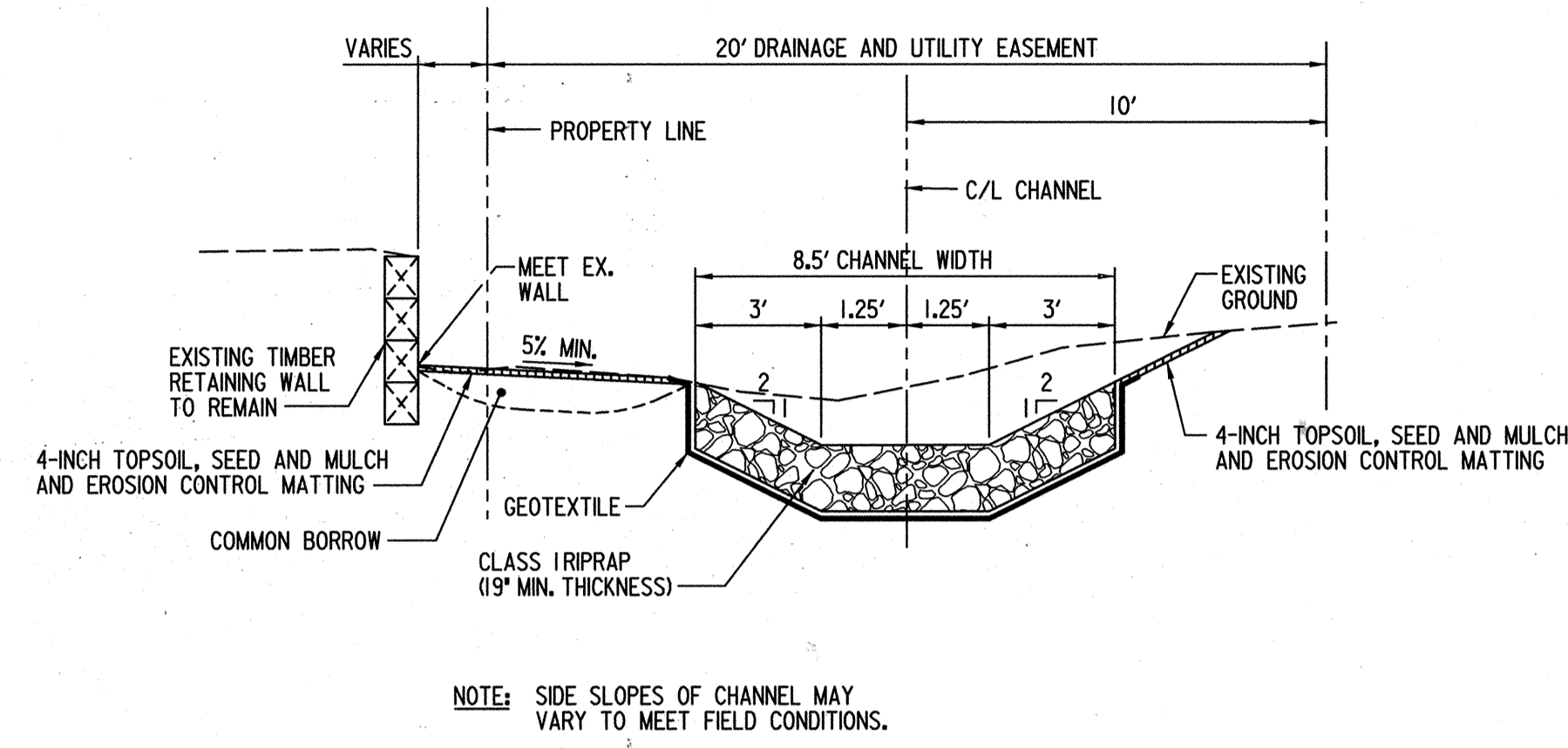
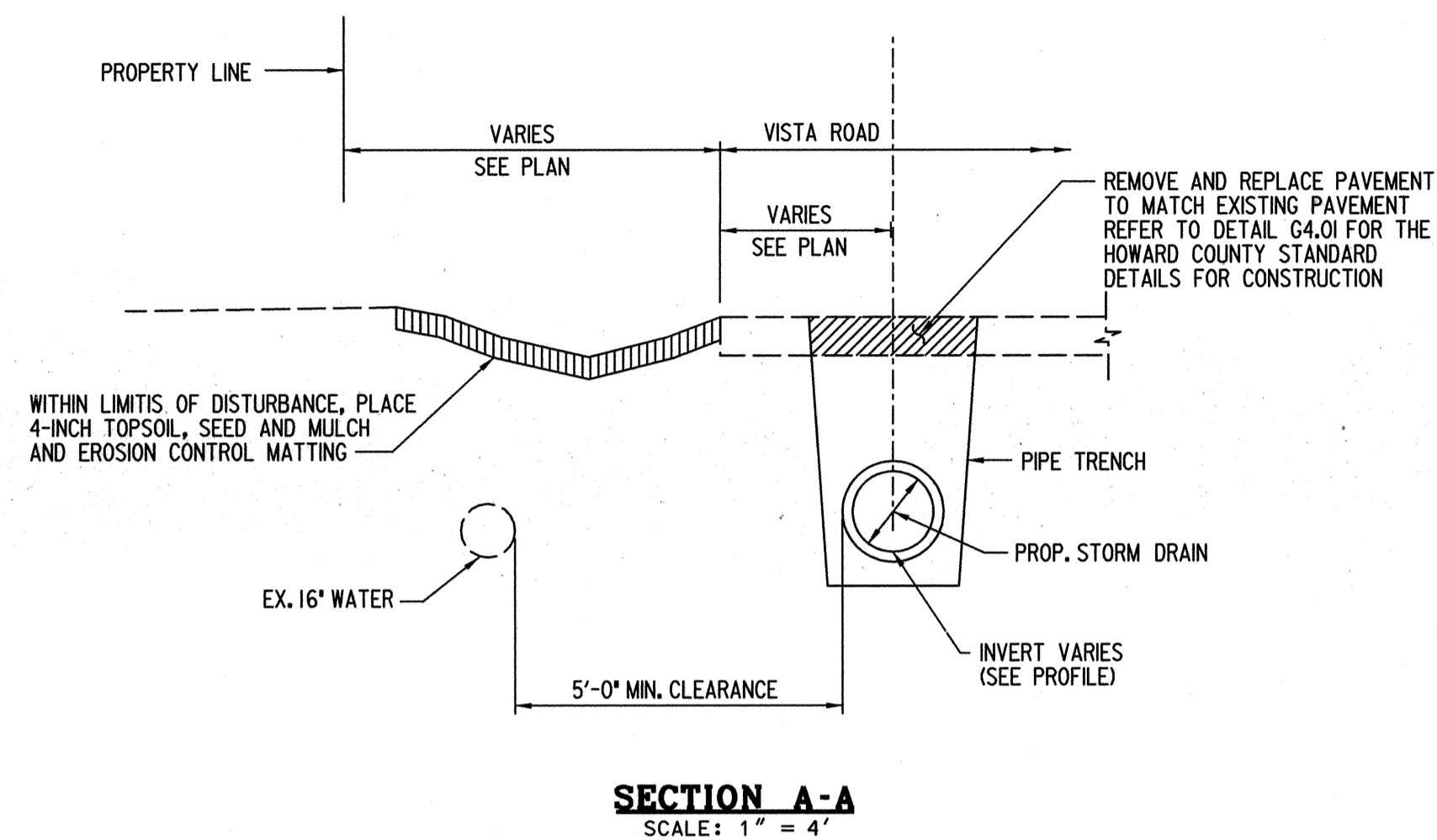
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *Janet...* 11/25/03
Chief, Bureau of Engineering: *William F....* 11-24-03
Chief, Division of Transportation and Special Projects: *Emily S....* 11/24/03
Chief, Bureau of Highways: *William F....* 11-24-03

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HUNT VALLEY, MARYLAND
TEL: (410) 785-1220

DES: DCD	JDH	1	AS-BUILT	11-17-04
DRN: SYC				
CHK: DTM				
DATE: 10/03	BY	NO.	REVISION	DATE

STROM DRAIN PROFILE
SCALE MAP NO. _____ BLOCK NO. _____

STORM DRAIN IMPROVEMENTS AT VISTA ROAD
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 3 OF 6



STRUCTURE SCHEDULE

STRUCTURE NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-2	'S' INLET	STA. 16+30.45, 14.04' RT.	-- --	345.40 (18")	348.0	HOCO STD. DETAIL SD 4.22
I-3	'S' INLET	STA. 17+20.69, 13.93' RT.	-- --	346.98 (15")	350.48	HOCO STD. DETAIL SD 4.22
I-4	'S' INLET	STA. 18+60.87, 14.90' RT.	-- --	347.70 (15")	351.2	HOCO STD. DETAIL SD 4.22
I-5	'S' INLET	STA. 19+72.26, 14+52' RT.	-- --	348.20 (15")	351.65	HOCO STD. DETAIL SD 4.22
I-6	'S' INLET	STA. 20+81.59, 17.21' RT.	-- --	348.8 (24")	352.3	HOCO STD. DETAIL SD 4.22
HW-1	TYPE 'A' HEADWALL	STA. 16+34.50, 34.50' LT.	-- --	343.8 (30")	--	HOCO STD. DETAIL SD 5.11
MH-1	SHALLOW BRICK MANHOLE	STA. 16+35.49, 7.83' RT.	344.51 (30")	344.01 (30")	350.6	HOCO STD. DETAIL G5.05
MH-2	SHALLOW BRICK MANHOLE	STA. 17+21.32, 7.44' RT.	345.56 (24")	345.36 (24")	351.1	HOCO STD. DETAIL G5.05
MH-3	SHALLOW BRICK MANHOLE	STA. 18+62.32, 8.44' RT.	347.10 (24")	346.90 (24")	352.0	HOCO STD. DETAIL G5.05
MH-4	SHALLOW BRICK MANHOLE	STA. 19+72.58, 8.10' RT.	348.40 (24")	348.17 (24")	352.5	HOCO STD. DETAIL G5.05

* ALL TOP AND INVERT ELEVATIONS SHALL BE FIELD VERIFIED

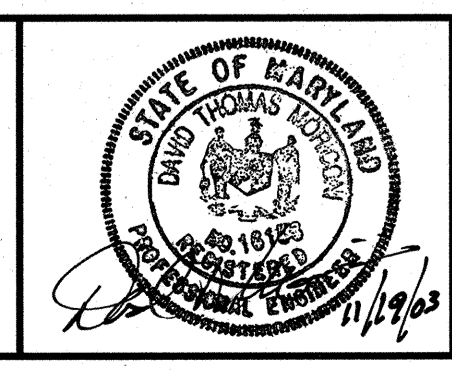
HORIZ 1"=40'
VERT 1"=4'

PART PLAN
SCALE: 1"=10'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 11/25/03
 Chief, Bureau of Engineering: *[Signature]* 11/24/03
 Chief, Division of Transportation and Special Projects: *[Signature]* 11/21/03
 Chief, Bureau of Highways: *[Signature]* 11-24-03

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HUNT VALLEY, MARYLAND
TEL: (410) 785-1220



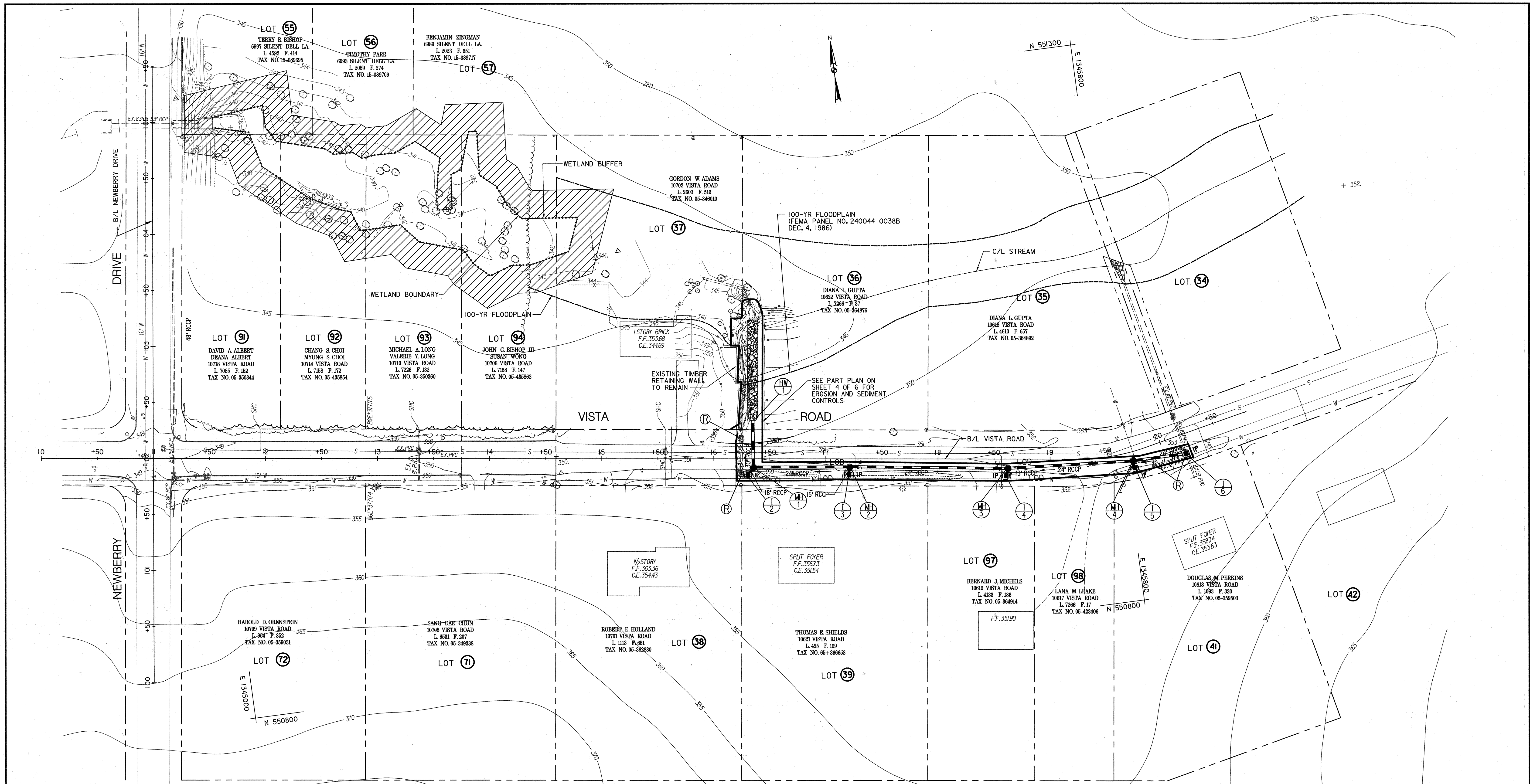
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DRN: SYC			
CHK: DTM			
DATE: 10/03	BY	NO.	REVISION

EROSION AND SEDIMENT CONTROL DETAILS

SCALE MAP NO. _____ BLOCK NO. _____

STORM DRAIN IMPROVEMENTS AT VISTA ROAD
5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 6



BY THE DEVELOPER:
 I / WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT

Evelyn Z. Jemel 11/24/03
 DEVELOPER DATE

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

Paul Miller 11/19/03
 ENGINEER DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jim Mays 11/20/03
 USDA NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Yvette Saly 11/26/03
 HOWARD SOIL CONSERVATION DISTRICT DATE

STAGING OF MATERIALS MAY TAKE PLACE WITHIN THE LIMIT OF DISTURBANCE. ALL MATERIALS SHALL BE SECURED AND PROTECTED FROM THE PUBLIC AT ALL TIMES. LAWNS AND PAVEMENT DISTURBED BY CONSTRUCTION SHALL BE REPAIRED TO ITS PREDEVELOPMENT CONDITION.

LEGEND

- SF — SILT FENCE
- IP INLET PROTECTION
- LOD — LIMIT OF DISTURBANCE
- PROP. STORM DRAIN
- ABANDON PIPE
- REMOVE PIPE
- Ⓡ REMOVE EXIST. STRUCTURES
- WETLAND BUFFER

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Jan J. ... 11/25/03
 DIRECTOR OF PUBLIC WORKS DATE

Evelyn Z. Jemel 11/24/03
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

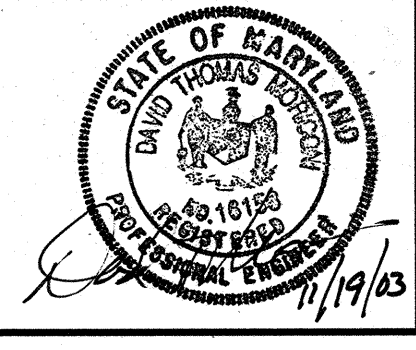
Paul Miller 11/24/03
 CHIEF, BUREAU OF ENGINEERING DATE

William J. ... 11/24/03
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY

URS

4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:	DCD		
DRN:	SYC		
CHK:	DTM		
DATE:	10/03		
BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

SCALE MAP NO. _____ BLOCK NO. _____

STORM DRAIN IMPROVEMENTS AT VISTA ROAD

5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE 1" = 40'

SHEET 5 OF 6

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Soil amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - apply 2 tons per acre dolomitic limestone (92 lbs. per 1,000 square feet) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1,000 square feet)...

Mulching: apply 1 1/2 to 2 tons per acre (70 to 90 lbs. per 1,000 square feet) of unrotted small grain straw immediately after seeding.

Maintenance: inspect all seeded areas and make needed repairs, replacements, and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Soil amendments: apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1,000 square feet).

Mulching: apply 1 1/2 to 2 tons per acre (70 to 90 lbs. per 1,000 square feet) of unrotted small grain straw immediately after seeding.

Maintenance: inspect all seeded areas and make needed repairs, replacements, and reseedings.

Mulching: apply 1 1/2 to 2 tons per acre (70 to 90 lbs. per 1,000 square feet) of unrotted small grain straw immediately after seeding.

Maintenance: inspect all seeded areas and make needed repairs, replacements, and reseedings.

TOPSOIL SPECIFICATIONS

SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- 1. TOPSOIL SHALL BE LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY...

TOPSOIL APPLICATION:

- A. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE, AND SEDIMENT TRAPS AND BASINS.

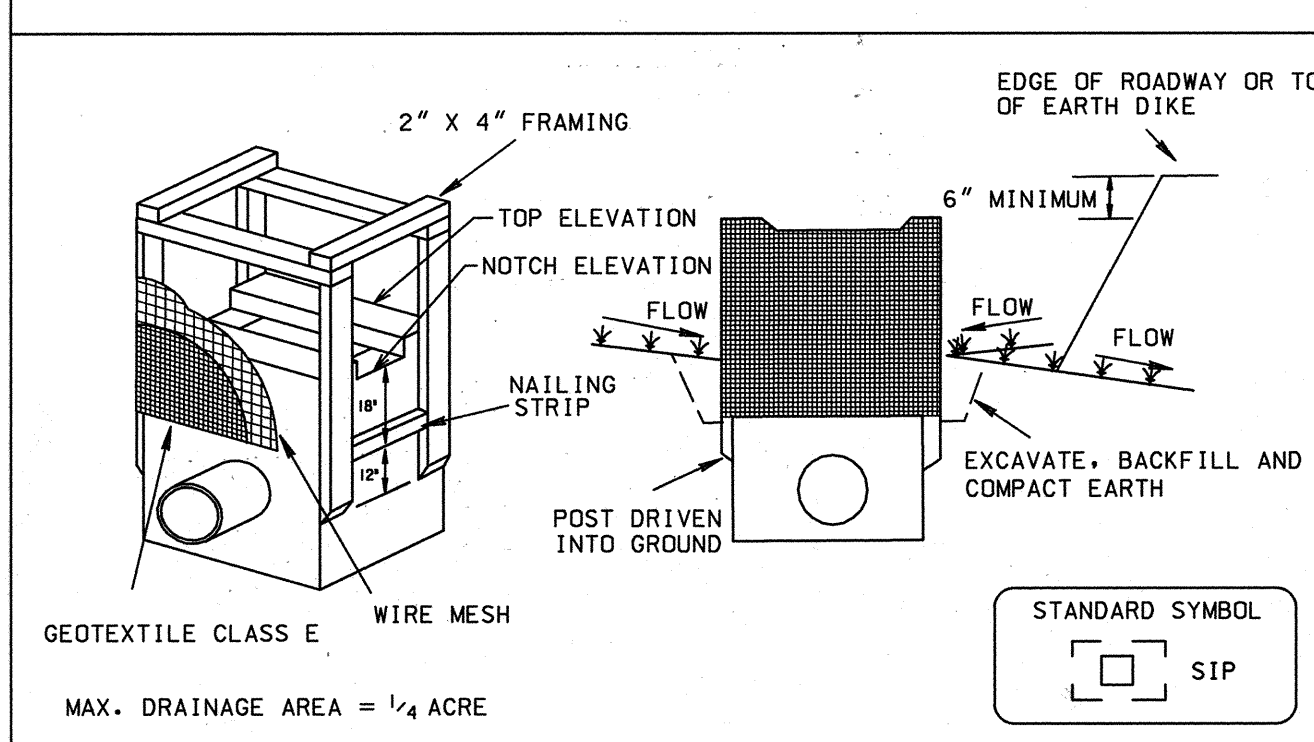
STANDARD SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County department of inspections, licenses and permits, sediment control division prior to the start of any construction (410-313-1855).

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN THE NECESSARY PERMITS (GRADING & EROSION AND SEDIMENT CONTROL) PRIOR TO CONSTRUCTION. (1 DAY)

DETAIL 23A - STANDARD INLET PROTECTION

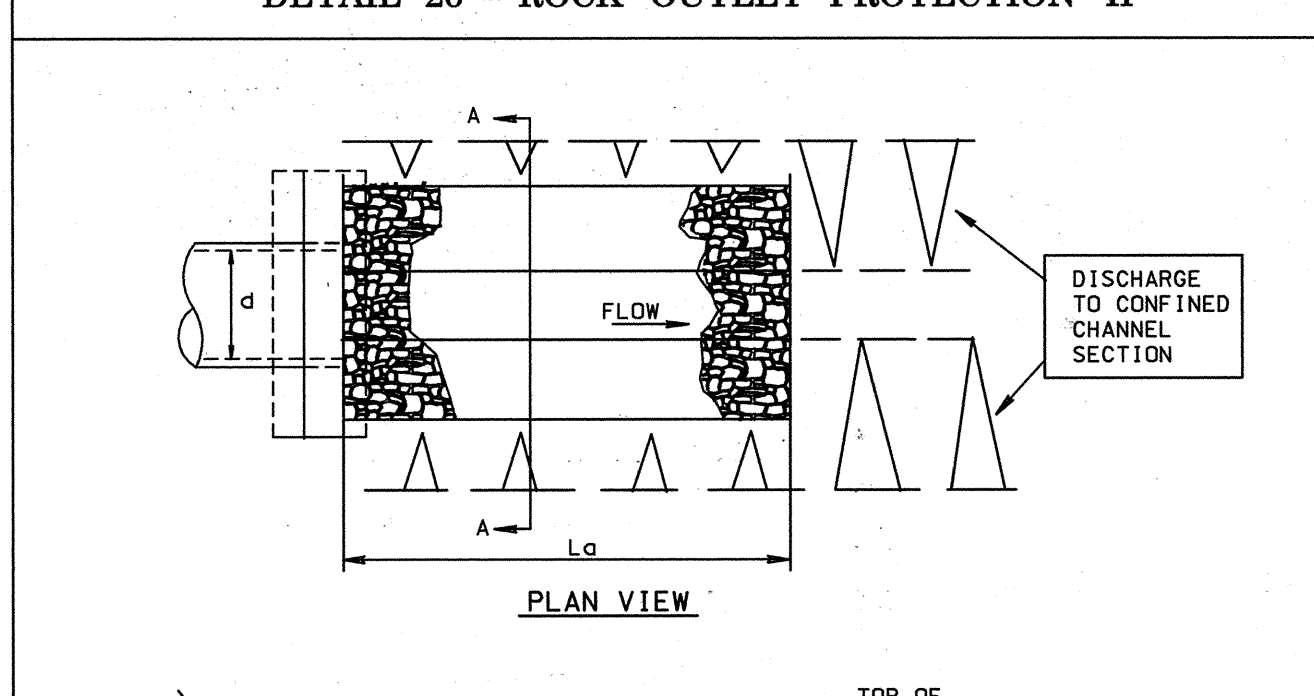


Construction Specifications

- 1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

DETAIL 26 - ROCK OUTLET PROTECTION II

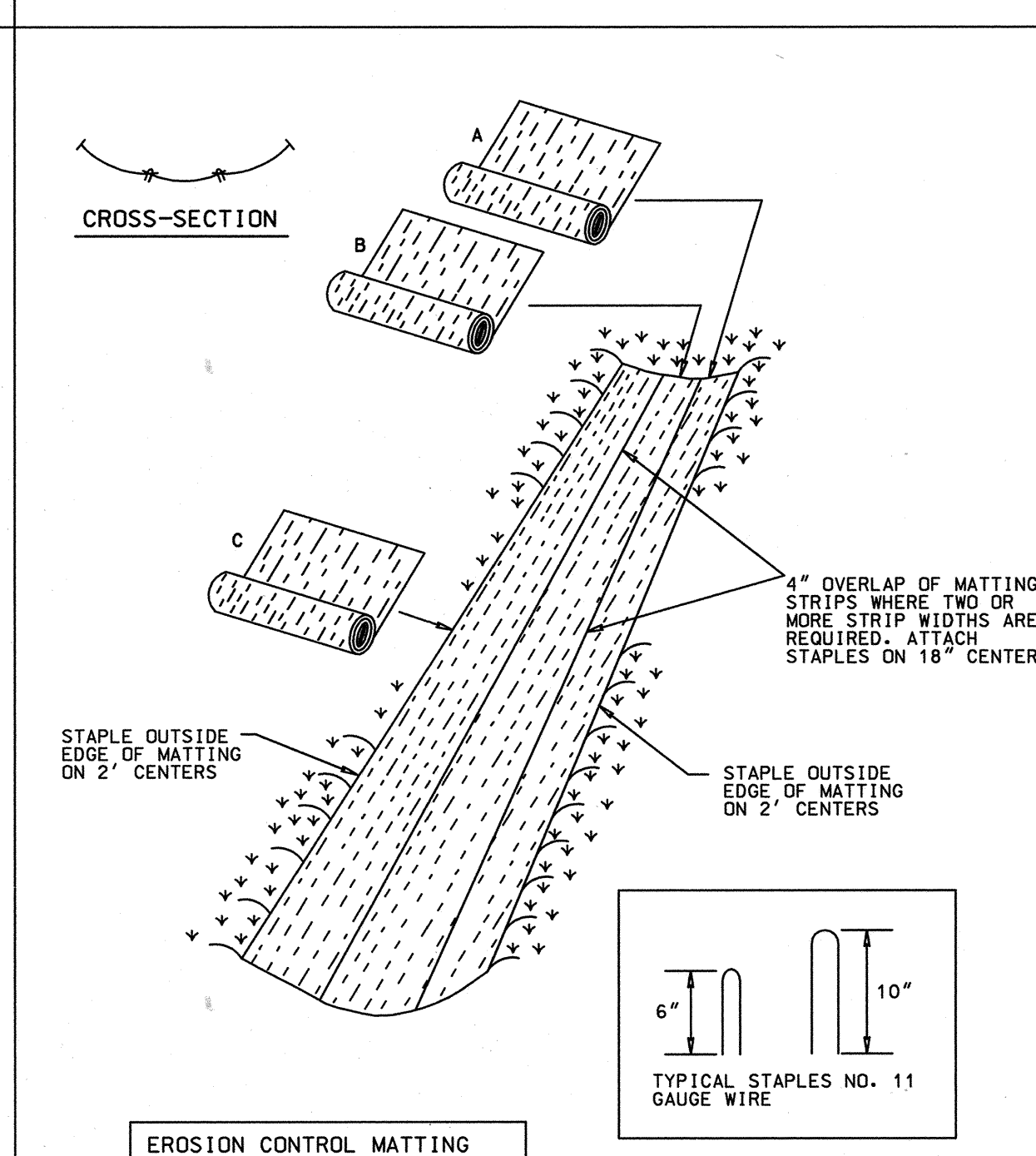


Construction Specifications

- 1. OBTAIN THE NECESSARY PERMITS (GRADING & EROSION AND SEDIMENT CONTROL) PRIOR TO CONSTRUCTION. (1 DAY)

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

DETAIL 30 - EROSION CONTROL MATTING



Construction Specifications

- 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and top firmly to conform to the channel cross-section.

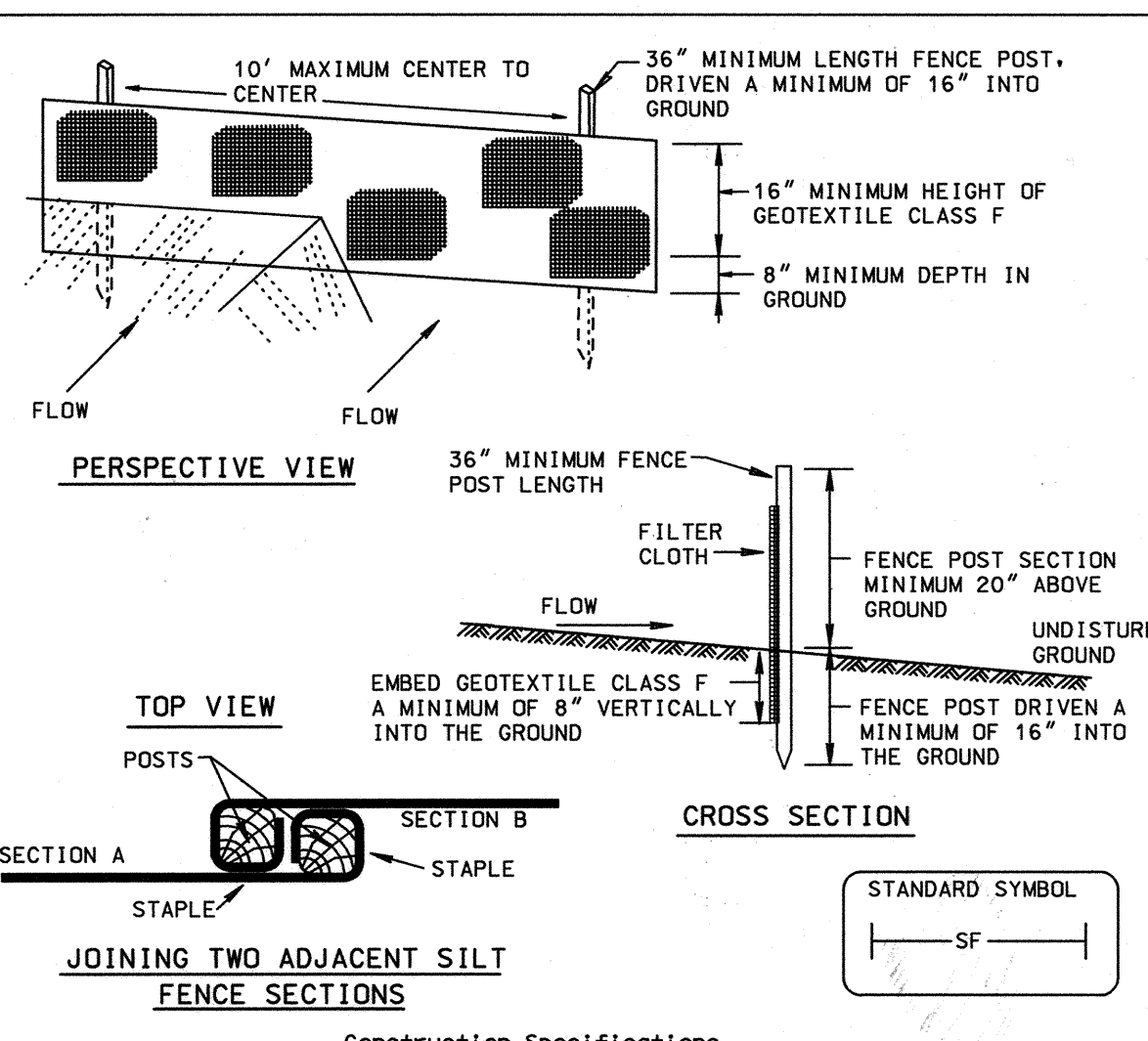
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

ROCK OUTLET PROTECTION II

- 1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

DETAIL 22 - SILT FENCE

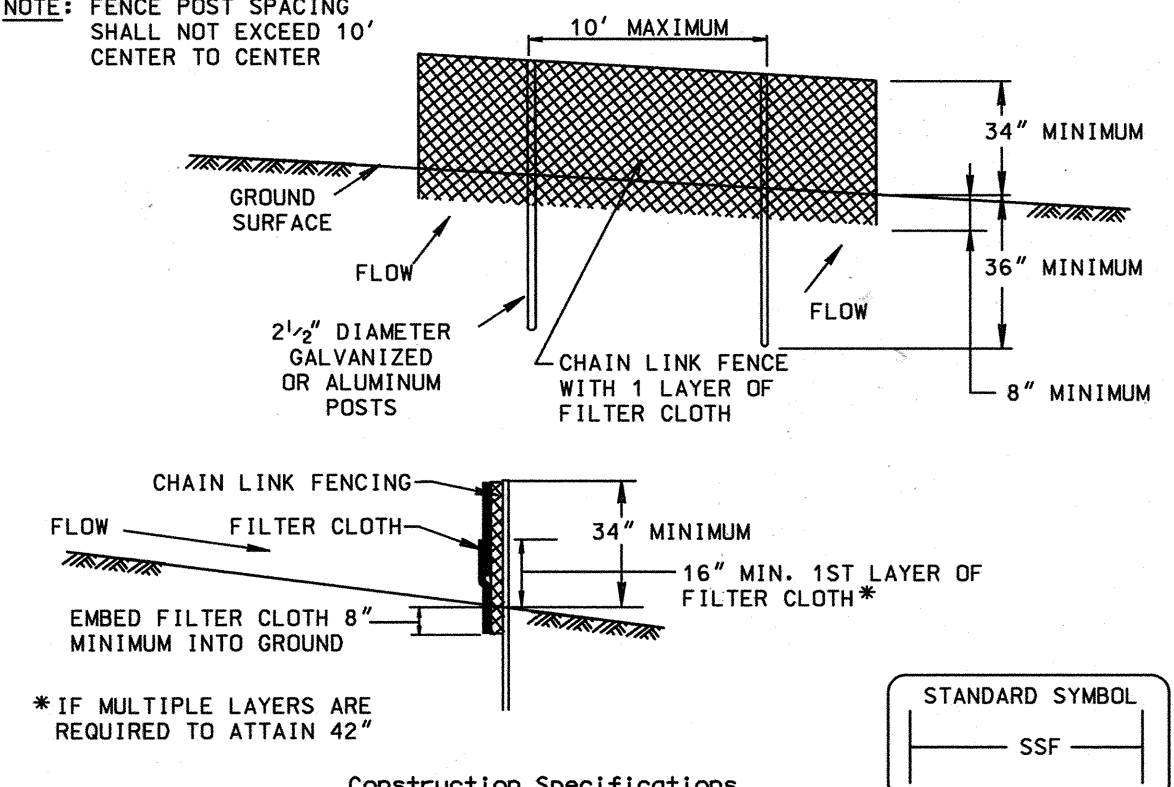


Construction Specifications

- 1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2 x 1 1/2 square (minimum) out, or 1 3/4 diameter (minimum) round and shall be of sound quality hardwood.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

- 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

SUPER SILT FENCE

Table with Design Criteria columns: Slope, Slope Steepness, Slope Length (maximum), Silt Fence Length (maximum). Rows include slope percentages from 0-10% to 50%+.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

BY THE DEVELOPER: I / WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS...

BY THE ENGINEER: I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS...

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Includes logos for URS and other agencies, and dates for approval.

STATE OF MARYLAND. Includes logos for the State of Maryland and the Department of Public Works, and dates for approval.

DESIGNATION: DES: DCD, DRN: SYC, CHK: DTM, DATE: 10/03. Includes a revision table.

EROSION AND SEDIMENT CONTROL DETAILS. SCALE MAP NO. BLOCK NO.

STORM DRAIN IMPROVEMENTS AT VISTA ROAD. 5TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND. SCALE NONE. SHEET 6 OF 6.